

ZEN ACADEMY BULLETIN

Official newsletter of Zen Multispeciality Hospital, Mumbai



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Editorial

Celebrating a Year of Progress and Looking Ahead

It is with great pride and enthusiasm that we present the first issue of Volume 2 of the Zen Bulletin, coinciding with the much-anticipated Lap Unlimited conference on August 2-3, 2025. As we mark the completion of our inaugural year, the Zen Bulletin has established itself as a vibrant platform for sharing knowledge, clinical experiences, and the latest advances in multidisciplinary healthcare.

Over the past year, our bulletin has brought together experts, practitioners, and thought leaders from diverse specialties, fostering a spirit of collaboration and continuous learning within the Zen Multi specialty Hospital community. We are deeply grateful to our contributors, editorial team, and readers whose unwavering support and engagement have been the cornerstone of our growth.

Spotlight on Innovation: Laparoscopic Surgery, Cardiology, and Obesity

This special issue is published in conjunction with Lap Unlimited, reflecting our commitment to advancing minimally invasive surgical techniques and their transformative impact on patient care. Laparoscopic surgery continues to redefine surgical standards, offering patients faster recovery, reduced pain, and improved outcomes. Our featured articles delve into cutting-edge developments, best practices, and the future of laparoscopy in various subspecialties.

In addition, we shine a light on cardiology, a field witnessing remarkable innovation in diagnostics, intervention, and preventive care. From novel imaging modalities to advances in interventional cardiology, our contributors explore how these breakthroughs are enhancing patient longevity and quality of life.

Obesity, a growing global health challenge, is also at the forefront of this issue. We examine the latest evidence-based approaches to obesity management, including surgical, medical, and lifestyle interventions, emphasizing the importance of a holistic, multidisciplinary strategy.

Looking Forward: Our Vision for Year Two

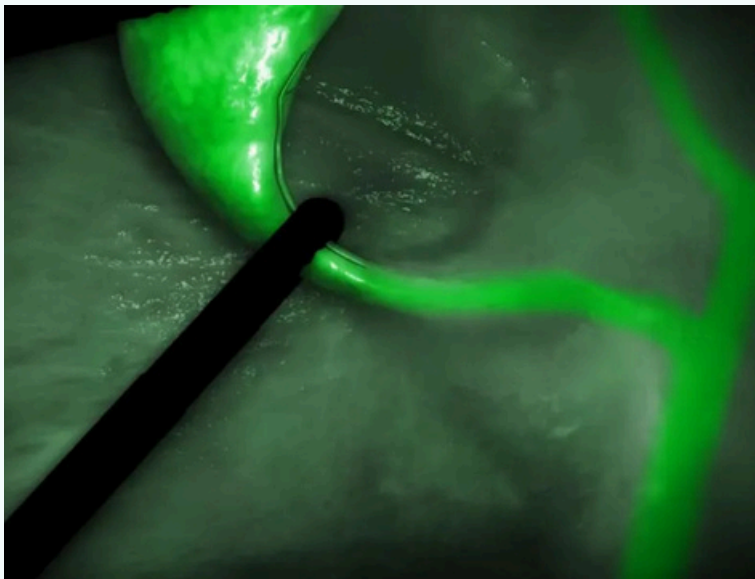
As we enter our second year, the Zen Bulletin remains committed to sharing practical, high-quality medical knowledge. We welcome contributions from clinicians, researchers, and allied health professionals to keep this a vibrant platform for learning and innovation.

We look forward to more interactive features, case discussions, and research collaborations—advancing patient care and academic excellence at Zen Multispecialty Hospital and beyond.

We extend our heartfelt gratitude to all contributors, reviewers, and the editorial board for their dedication and hard work. Special thanks to the organizing committee of **Lap Unlimited** for providing this inspiring platform to showcase the best of surgical and medical advancements. Here's to another year of discovery, collaboration, and progress.

With warm regards,

Dr Avinash Supe



From Delineation to Decision: The Transforming Role of Fluorescence-Guided Surgery

Dr Roy Patankar, Dr Avinash Supe

Introduction

Fluorescence-guided surgery (FGS) has transformed intraoperative visualization, allowing surgeons to see beyond the naked eye. While agents like indocyanine green (ICG) were first used for tissue delineation and preventing injury to vital structures, FGS has rapidly advanced. Today, it not only aids anatomical guidance but also shapes surgical decisions in real time—impacting resection margins, procedure completeness, and overall strategy¹⁻³.

Historical Perspective:

Initially, ICG fluorescence was used to improve anatomical visualization during surgery. In hepatobiliary procedures, it helped identify the biliary tree in real time, reducing bile duct injuries during laparoscopic cholecystectomy. In urological and colorectal surgeries, it enabled safe delineation of ureters and vessels. Over time, these applications established FGS as a reliable tool for minimizing complications, such as in Heller's cardiomyotomy.

Expanding Indications:

Decision-Making in the Modern OR
Fluorescence-guided surgery (FGS) has evolved from simple visualization to actively guiding intraoperative decisions:

- **Margin Assessment in Oncologic Surgery:** FGS enables real-time tumor margin evaluation in cancers like breast, colorectal, and liver, helping reduce positive margins and reoperations by allowing surgeons to adjust resection planes mid-procedure.
- **Perfusion and Anastomotic Integrity:** In gastrointestinal and esophageal surgeries, ICG fluorescence assesses tissue perfusion before anastomosis, significantly lowering anastomotic leak rates.
- **Functional Assessment in Specialized Procedures:** During Heller's cardiomyotomy, FGS helps confirm complete myotomy and mucosal integrity. It also aids tissue viability and vascular assessment in reconstructive and transplant surgeries.
- **Lymphatic Mapping and Sentinel Node Identification:** FGS is increasingly applied for sentinel lymph node mapping in breast, gastric, and colorectal cancers, optimizing lymphadenectomy while minimizing unnecessary dissection.

Clinical Impact:

A growing body of evidence highlights FGS as a valuable surgical tool:

- Improved Precision:
- Randomized trials show FGS reduces positive margins and enhances oncologic resection accuracy.
- Enhanced Safety:
- Real-time visualization of vital structures and tissue viability lowers intraoperative injuries and postoperative complications.
- Broader Applications:
- FGS is now used in minimally invasive, robotic, pediatric, and complex reconstructive surgeries.

Future Directions

Advances in targeted molecular imaging, quantitative fluorescence, and integration with augmented reality promise even greater precision. New fluorophores and imaging systems aim to improve tumor detection and functional assessment.

**Future Directions**

The future of FGS lies in targeted molecular imaging, quantitative fluorescence assessment, and integration with augmented reality platforms. Novel fluorophores and imaging systems are under development, promising even greater specificity for tumor detection and functional evaluation^{1,2,3}.

Conclusion

The journey of fluorescence-guided surgery from a tool for anatomical delineation to a cornerstone of intraoperative decision-making marks a significant advancement in surgical practice. As indications expand and technology evolves, FGS is poised to become an indispensable component of precision surgery, enhancing outcomes for patients across a spectrum of specialties

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Enhanced Recovery After Surgery (ERAS): Protocols and Impact

Dr Prasad Bhukebag, Dr Avinash Supe

Introduction

Enhanced Recovery After Surgery (ERAS) represents a paradigm shift in perioperative care, emphasizing evidence-based, multimodal strategies to optimize surgical outcomes and expedite recovery. Initially developed for colorectal surgery, ERAS protocols have now permeated multiple surgical specialties, adapting to diverse patient populations and healthcare settings.

Core Components of ERAS Protocols

Prehabilitation

Prehabilitation involves preparing patients physically and psychologically before surgery. This includes encouraging light exercise, respiratory physiotherapy, and optimizing control of comorbidities such as diabetes and hypertension. Patient and caregiver education about the surgical process is also pivotal for setting realistic expectations and improving compliance.

Preoperative Measures

- **Tobacco Cessation:** Stop tobacco at least 1 week before surgery to reduce complications and aid healing.
- **Bowel Prep:** Not routinely needed; reserved for low rectal surgery or planned stoma.
- **Fasting & Carb Loading:** Follow the 2-4-6 rule – 8 hrs for solids, 6 hrs for semisolids, 4 hrs for milk/tea, 2 hrs for clear fluids. Carb drinks 2 hrs before surgery help recovery (avoid in diabetics).
- **Sedation:** Avoid routine long-acting sedatives; use anxiolytics only if needed.

Intraoperative Strategies

- **Opioid-Sparing Analgesia:** Use multimodal pain relief (blocks, NSAIDs, paracetamol) to reduce opioid use and aid recovery.
- **Normothermia:** Keep body temp $>36^{\circ}\text{C}$ with warmers and fluids to lower risks of bleeding, infection, and heart issues.
- **GDFT:** Tailored fluid therapy based on monitoring improves perfusion and lowers complications.
- **Minimally Invasive Surgery:** Laparoscopic/robotic methods with ERAS protocols enhance recovery and reduce pain and blood loss.

Postoperative Care ;

- **Early Mobilization:** Walking within hours reduces clots and aids bowel recovery.
- **Early Feeding:** Start liquids in 4 hrs, semisolids by 6 hrs to boost nutrition and healing.
- **Drains & Tubes:** Avoid routine use to reduce discomfort and infection.
- **Analgesia:** Continue regional and non-opioid meds for pain and function



Impact of ERAS

- **Shorter Stays:** ERAS cuts hospital stay without more readmissions.
- **Fewer Complications:** Lowers infection, leaks, and clots.
- **Better Satisfaction:** Education, mobility, and pain relief improve outcomes

Indian Context

Adapted for local needs—cost, culture, and collaboration—ERAS is working well in both rural and urban settings.

Conclusion

ERAS improves recovery, reduces complications, and enhances patient experience through coordinated, evidence-based care.





Expanding Applications of 2D Echocardiography in Clinical Practice

Dr Brijesh Agarwal, Consultant Cardiologist

Introduction

2D echocardiography is a vital, non-invasive tool for real-time heart assessment, now widely used in diagnosis, management, and surgical support.

AI in Echocardiography

AI and machine learning are revolutionizing echocardiography by automating image analysis, enhancing diagnostic accuracy, and streamlining workflows—making the tool more efficient, consistent, and accessible for clinicians.

Core Clinical Applications:

- **Heart Failure:** Assesses ejection fraction, ventricular size, and wall motion—crucial for diagnosis and management.
- **Valvular Disease:** Identifies and grades stenosis, regurgitation, and prolapse; guides intervention and follow-up.
- **Congenital Defects:** Detects septal defects and structural anomalies in both children and adults for early intervention.
- **Pericardial Disease:** Quickly identifies effusion, pericarditis, and constriction; useful for bedside evaluation.

- **Cardiomyopathies:** Monitors hypertrophic and dilated forms by assessing chamber size, wall thickness, and function.
- **Other Uses:** Helps detect thrombi, assess blood flow, monitor treatments, and manage chronic heart conditions.

Emerging & Expanding Roles:

- **Guiding Interventions:** 2D and 3D echo are vital for real-time guidance in valve repairs, replacements, and septal defect closures.
- **Intracardiac Echo (ICE):** ICE offers high-resolution internal imaging for precise navigation during complex procedures.

Future Directions: AI integration will further enhance accuracy, efficiency, and procedural guidance. Advances in 3D and ICE will continue to complement 2D imaging.

Conclusion:

2D echocardiography remains essential in cardiology, with evolving roles in diagnosis, management, and interventions—driven by tech innovations and AI.



It Takes A Village

Dr Vishakha Kalikar

My recent trip to the **European Hernia Society (EHS) Annual Conference** was nothing short of surreal. I had the incredible opportunity to present our work on **'Post- Traumatic Dor's Wrap Migration'** as a podium presentation to an audience of surgeons from across the globe. The three days I spent in Paris were a perfect blend of academia and joy. Each day was packed with learning from the master's themselves. A standout session featured surgical videos by **Dr. Conrad Ballecer, Dr. Igor Belyansky, Dr. Todd Heniford**, and the inventor of TAR, **Dr. Yuri Novitsky** – a lineup that had the entire audience captivated.

Another highlight was the unveiling of the **new EHS guidelines** on the management of emergency hernia surgeries. These evidence-based recommendations are a valuable tool for improving daily clinical practice.

A particularly special moment for me was reuniting with my mentors from my time in Madrid, **Dr. Miguel Garcia and Dr. Javier Monclus** – both of whom continue to inspire with their warmth and generosity.

The friendships I've forged during this conference are truly for a lifetime. None of this would have been possible without the strong foundation laid by **Roy Sir, Dr. Avinash Supe, Dr. S. K. Mathur, Dr. Madhuri Gore and Team Zen**, who have consistently pushed me to step outside my comfort zone and bring it on.

This – this truly is my village.



The Obesity Revolution: How GLP-1 Drugs Are Changing Treatment Approaches

Dr Manjiri Karlekar, Consultant Endocrinologist

Obesity rates have surged globally, increasing risks of diabetes, hypertension, and heart disease. While traditional treatments often fall short, GLP-1 receptor agonists have transformed obesity management with both oral and injectable options.

Oral Option:

- Semaglutide (Rybelsus®) – Daily tablets (3mg–14mg) taken on an empty stomach.

Weekly Injectables:

- Semaglutide (Ozempic®/Wegovy®) – Up to 2.4mg for obesity.
- Tirzepatide (Mounjaro®/Zepbound®) – 2.5–15mg; offers up to 22% weight loss.
- Dulaglutide (Trulicity®) – 0.75–4.5mg; simpler titration, slightly lower efficacy.

Daily Injectable:

- Liraglutide (Saxenda®/Victoza®) – 0.6–3mg; suits those preferring smaller daily doses.

Tirzepatide Leads in Efficacy

Among these options, tirzepatide's dual GIP/GLP-1 mechanism appears most potent, achieving up to 22% weight loss compared to semaglutide's 15% in head-to-head trials.

Formulation Flexibility and Dosing Preferences

Semaglutide offers more formulations, including the only oral GLP-1.

Dulaglutide has simpler titration but slightly lower efficacy. Liraglutide's daily dosing may suit those who prefer smaller, more frequent injections. Weekly injectables generally support better adherence in real-world settings.

Side Effect Profiles and Tolerability

While all GLP-1s commonly cause transient nausea and constipation, tirzepatide shows slightly higher GI effects but offers better glucose control. Semaglutide has the most cardiovascular outcome data. Oral semaglutide eliminates injections but requires strict fasting. Cost differences also play a role, with newer agents being more expensive.

Other rarer side effects of all these drugs is development of gallstones, pancreatitis, and recently few incidences of sight threatening complications have been reported, however the causality of these complications due to these drugs is unproven. Another caution to be practiced is to withdraw these drugs prior to any surgeries requiring general anaesthesia due to the risk of aspiration.



India's Metabolic Challenge and Cost Barriers

In India's challenging metabolic landscape - where 40% urban obesity rates coexist with 77 million diabetes cases - these drugs offer hope, though their ₹10,000-25,000 monthly cost remains prohibitive for many. The oral option may improve accessibility, while the superior weight loss of tirzepatide could benefit those with severe obesity. However, the Indian phenotype's unique characteristics - including greater visceral fat at lower BMIs - requires careful consideration when choosing agents and dosing strategies.

GLP-1 Agonists: A New Era in Obesity and Metabolic Care

GLP-1 receptor agonists have revolutionized obesity treatment, offering significant weight loss previously hard to achieve with medication. Tirzepatide leads in efficacy, semaglutide offers flexible options, and older agents remain more affordable. While lifestyle changes are still essential, these drugs give physicians powerful new tools for managing obesity and related disorders. With growing use and ongoing research, GLP-1s will play an expanding role in comprehensive weight management.





Journey of Laparoscopy - As Technique Becomes Safer, Indications Expand

Dr Priya Gupta

Over the years, minimally invasive surgery (MIS), particularly laparoscopy, was primarily limited to relatively straightforward procedures such as cholecystectomy, appendicectomy, and hernia repair. This cautious approach was largely due to concerns about patient safety, limited instrumentation, and the steep learning curve associated with these new techniques.

Technological Advancements and Growing Expertise

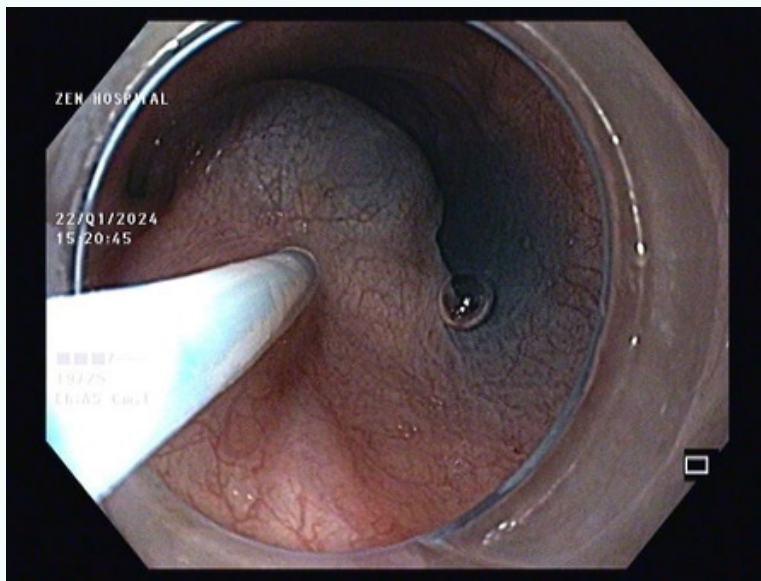
However, the last decade has witnessed a remarkable transformation. Advances in instrumentation, imaging technologies, and surgical techniques have dramatically improved the safety and efficacy of MIS. With increasing surgeon expertise and the integration of high-definition cameras and real-time imaging, the range of procedures performed laparoscopically has broadened significantly.

Today, complex surgeries like Whipple's procedure, hepatectomy, and oesophagectomy are increasingly performed laparoscopically at specialized centers, thanks to improved precision, visualization, and control offered by modern MIS systems.

Beyond abdominal surgery, MIS is expanding into breast, thyroid, and parathyroid procedures—offering benefits like smaller incisions, less pain, quicker recovery, and minimal scarring.

MIS has also enhanced healthcare efficiency by reducing hospital stays and complications. Robotic systems and simulation training continue to push the boundaries, enabling safe performance of more complex cases. As MIS becomes safer and more advanced, its role continues to grow—transforming complex surgery and raising the standard of patient care.





Third Space Endoscopy – The New Frontier in Minimally Invasive GI Care

Dr Advait Patankar, Dr Mit Shah, & Dr Meghraj Ingle

Introduction

The field of GI endoscopy has witnessed a remarkable transformation over the past few decades. What began as a purely diagnostic modality has now evolved into a platform capable of delivering advanced therapeutic interventions. What started off by diagnosing ulcers, varices and lesions was followed by clipping, banding and mucosal resections. However, Third Space Endoscopy (TSE) is one of the most exciting innovations that has truly revolutionized this field, opening up a new anatomical layer in the gastrointestinal wall, allowing endoscopists to operate from within the wall of the GI tract. This technique uses the submucosal tunnel to access and treat pathologies, while maintaining the integrity of the mucosa above and the submucosa below.

Technique

The foundations for developing this technique were laid by the advent of Endoscopic Submucosal Dissection (ESD) which involves injection of fluid into the submucosal space to expand it, followed by dissection. TSE, an adaptation demonstrated by **Dr. Haruhiro Inoue** with the first POEM in 2010, involves a mucosal incision away from the target site, followed by creating a submucosal tunnel to reach the area of interest. TSE's advantage over ESD is that it preserves the mucosa, making defect closure easier

Applications

Peroral Endoscopic Myotomy (POEM)

is now a first-line treatment for achalasia, offering outcomes comparable to Heller's myotomy but with higher rates of reflux. Variants include **Gastric POEM (G-POEM)** for gastroparesis and **Zenker's POEM (Z-POEM)** for Zenker's diverticulum.

Submucosal Tunneling Endoscopic Resection (STER) is used for lesions arising from the muscularis propria, such as neuroendocrine tumors (NETs).

Per Rectal Endoscopic Myotomy (PREM), developed in India by Dr. Amol Bapaye, is used for short-segment Hirschsprung's disease. **Peroral Endoscopic Tunneling for Restoration of the Esophagus (POETRE)** is performed in select caustic injury cases to avoid more invasive surgeries like colonic pull-through.

What Lies Ahead?

Advances in endoscopic devices, including suturing tools, will broaden the scope of Third Space Endoscopy (TSE). When combined with NOTES (Natural Orifice Transluminal Endoscopic Surgery) approaches—such as POEM with transoral fundoplication—they could expand indications and improve outcomes.

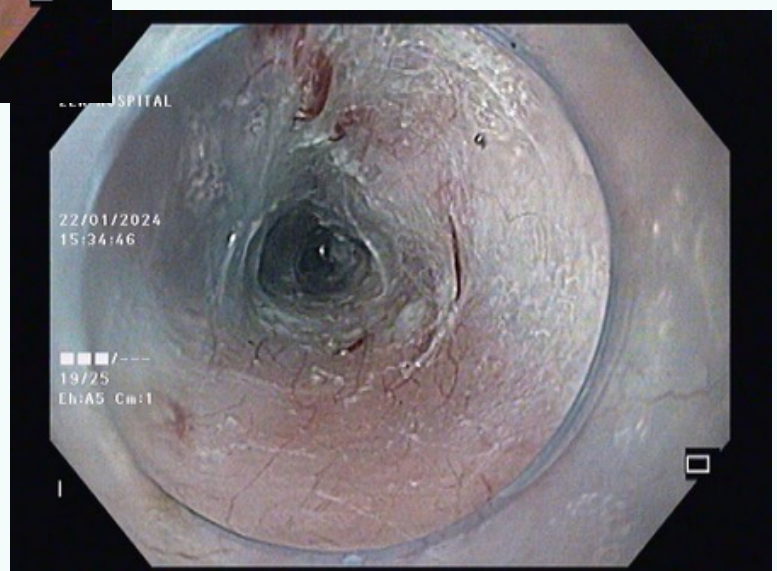
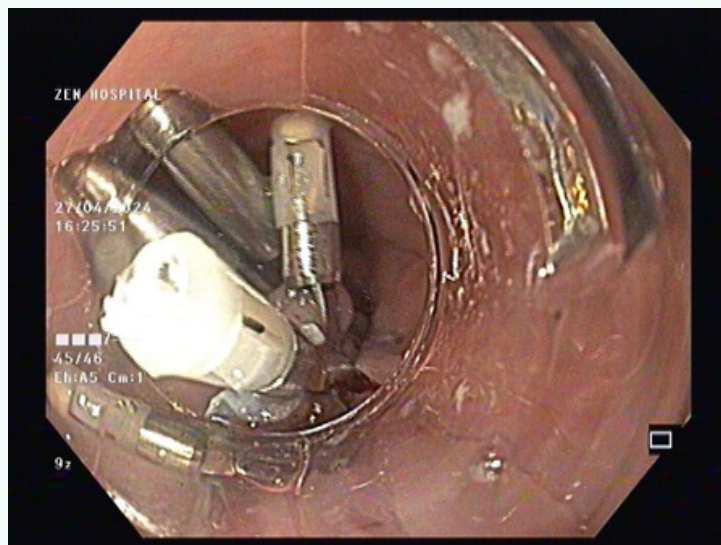
Flexible robotic systems promise enhanced precision in confined spaces, surpassing human dexterity. Artificial Intelligence will aid in real-time decision-making—improving lesion detection, resection accuracy, and complication prediction.

TSE access to mediastinal and retroperitoneal spaces may significantly reduce the morbidity of traditional laparoscopic or thoracoscopic surgeries.

Key Takeaways:

Third Space Endoscopy (TSE) has transformed access, minimized trauma, and improved recovery, bridging endoscopy and surgery with precise, minimally invasive solutions once thought impossible.

At Zen Hospital, we offer a full range of endoscopic care – from ERCPs and EUS-guided procedures to advanced TSE – focused on delivering less invasive treatment options.



A Breakthrough Heart Procedure: How TAVI is Changing Lives

Dr Narayan Gadkar, Consultant Cardiologist

Introduction

Heart procedures can feel overwhelming, especially for older adults or those with other health issues. But medical advances have made treatments safer and less invasive. One such breakthrough is Transcatheter Aortic Valve Implantation (TAVI)—a game-changing option for patients with aortic stenosis, a condition where the heart's aortic valve narrows, causing fatigue, breathlessness, and chest pain.

Traditionally, treatment involved open-heart surgery. Now, TAVI offers a safer, quicker alternative, helping patients recover faster and return to normal life sooner.

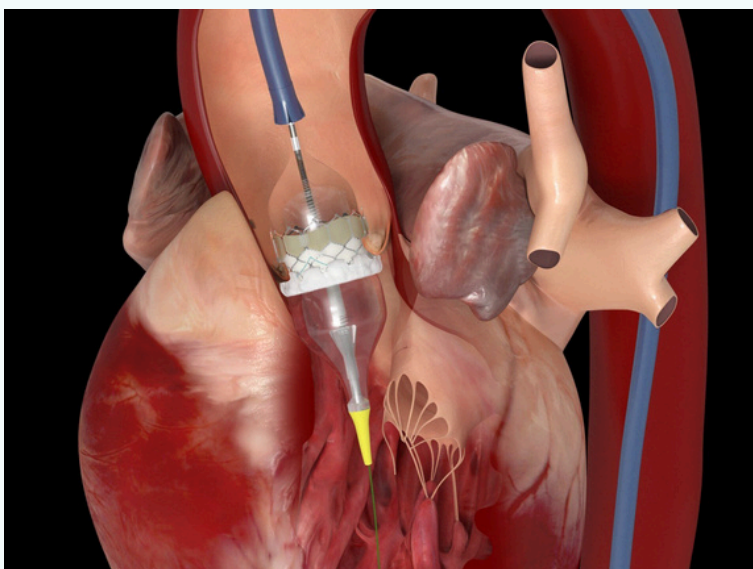
What is TAVI?

TAVI is a minimally invasive procedure that replaces a damaged aortic valve using a catheter, usually inserted through a blood vessel in the groin. The new valve is guided into place and starts working immediately—without the need to open the chest or stop the heart.

Why TAVI is a Game-Changer

- **Minimally Invasive:** No major incisions or chest opening. Less pain, faster healing.
- **Quick Recovery:** Most patients go home within days and resume daily activities in weeks.
- **Lower Risk:** Reduced chances of complications like infection or stroke—ideal for high-risk patients.
- **Improved Quality of Life:** Patients often feel better immediately—more energy, less breathlessness, and greater independence.
- **High Success Rates:** TAVI offers excellent outcomes, especially in elderly or high-risk individuals.

TAVI is redefining heart valve care—offering hope, safety, and a quicker return to life for those once considered too risky for surgery.





Banff visitor centre

A Canadian Adventure

Dr Bhavana Satwik

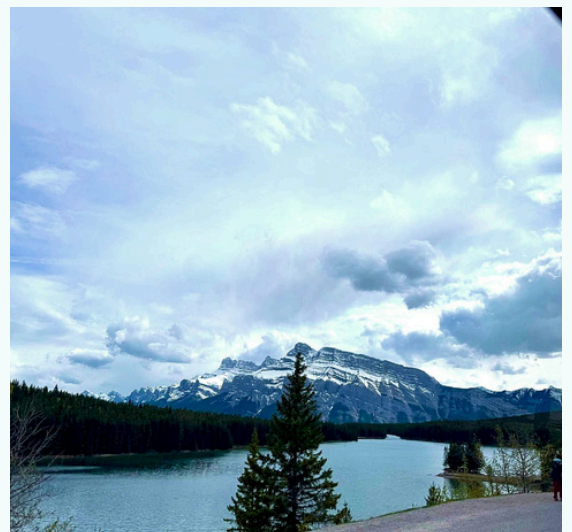
Our family's Canadian adventure began in Calgary, where the spirit of the West still thrives. From the moment we arrived, the city's vibe—modern yet rooted in cowboy heritage—was unmistakable. We strolled along the Bow River to Prince's Island Park, where the Chevron Learning Pathway introduced us to local wetlands and wildlife. A delicious lunch at River Café, with its seasonal, locally sourced menu, was the perfect riverside treat.

Next, we followed the scenic RiverWalk from Chinatown to Stampede Park, pausing at the Confluence where the Bow and Elbow rivers meet. Studio Bell, home of the National Music Centre, captivated us with its design and musical heritage. The Calgary Zoo amazed us with majestic lions, life-sized dinosaur displays, and a strong conservation message. At Heritage Park, vintage trains and costumed interpreters brought history to life. The Calgary Tower's glass-floored elevator gave us panoramic views and a thrill to remember.

Our journey continued to Banff, gateway to the Rockies. The drive was stunning, with mountain peaks growing ever larger. On Banff Avenue, mountain views framed every step. The Banff Gondola took us to Sulphur Mountain's summit, offering awe-inspiring vistas. We explored Lake Louise and Lake Minnewanka, their turquoise waters mirroring the towering peaks. Relaxing in the mineral-rich Banff Upper Hot Springs and visiting the Cave and Basin National Historic Site added to the magic.

A side trip to Drumheller brought us into dinosaur country. The Alberta Badlands' hoodoos and canyons felt otherworldly. At the Royal Tyrrell Museum, we marveled at ancient fossils and life-sized dinosaurs. Horseshoe Canyon took our breath away—its dramatic terrain, rust-colored rock, and eerie beauty were unforgettable.

From Calgary's urban charm to Banff's mountain grandeur and Drumheller's prehistoric landscapes, every stop brought joy, wonder, and memories we'll cherish forever.



Lake Minnewanka.